

WHAT IS CLAIMED IS:

1. A camera system which comprises: a lens apparatus which is provided with a image-taking optical system including a focusing lens; and a camera on which the lens apparatus is mounted, comprising:

a first focus detection unit and a second focus detection unit which detect a focusing state of the image-taking optical system by methods different from each other; and

a controller which controls driving of the focusing lens, the controller calculating a target driving amount of the focusing lens based on a result of the detection by the first focus detection unit, and performing a first driving control to drive the focusing lens toward a position corresponding to the target driving amount and a second driving control to drive the focusing lens based on a result of the detection by the second focus detection unit,

wherein the controller switches from the first driving control to the second driving control when a remaining driving amount to the target driving amount of the focusing lens by the first driving control becomes a predetermined amount.

2. The camera system according to Claim 1,

wherein the controller performs the second driving

control at a second driving speed lower than a first driving speed of the focusing lens in the first driving control.

3. The camera system according to Claim 1,  
wherein the controller performs the second driving control when the target driving amount of the focusing lens calculated based on the result of the detection by the first focus detection unit is equal to or less than the predetermined amount.

4. The camera system according to Claim 1,  
wherein the first focus detection unit detects the focusing state of the image-taking optical system by a phase difference detection method or an active method, and the second focus detection unit detects the focusing state of the image-taking optical system by a contrast detection method.

5. The camera system according to Claim 1,  
wherein the controller switches from the first driving control to the second driving control without stopping the focusing lens.

6. A camera comprising:  
a first focus detection unit and a second focus

detection unit which detect a focusing state of a image-taking optical system including a focusing lens, by methods different from each other; and

a controller which controls driving of the focusing lens, the controller calculating a target driving amount of the focusing lens based on a result of the detection by the first focus detection unit, and performing a first driving control to drive the focusing lens toward a position corresponding to the target driving amount and a second driving control to drive the focusing lens based on a result of the detection by the second focus detection unit,

wherein the controller switches from the first driving control to the second driving control when a remaining driving amount to the target driving amount of the focusing lens by the first driving control becomes a predetermined amount.

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7. The camera according to Claim 6,

wherein the controller performs the second driving control at a second driving speed lower than a first driving speed of the focusing lens in the first driving control.

8. The camera according to Claim 6,

wherein the controller performs the second driving control when the target driving amount of the focusing lens

calculated based on the result of the detection by the first focus detection unit is equal to or less than the predetermined amount.

9. The camera according to Claim 6,

wherein the first focus detection unit detects the focusing state of the image-taking optical system by a phase difference detection method or an active method, and the second focus detection unit detects the focusing state of the image-taking optical system by a contrast detection method.

10. The camera according to Claim 6,

wherein the controller switches from the first driving control to the second driving control without stopping the focusing lens.

11. The camera according to Claim 6,

wherein the image-taking optical system is integrally provided.

12. The camera according to Claim 6,

wherein a lens apparatus which includes the image-taking optical system can be attachable.

13. A lens apparatus which can be attachable to a camera comprising a first focus detection unit and a second focus detection unit which detect a focusing state of a image-taking optical system by methods different from each other, comprising:

the image-taking optical system which includes a focusing lens; and

a controller which controls driving of the focusing lens based on information obtained from the camera, the controller performing a first driving control to drive the focusing lens toward a position corresponding to a target driving amount of the focusing lens calculated in the camera based on a result of the detection by the first focus detection unit and a second driving control to drive the focusing lens based on a result of the detection by the second focus detection unit,

wherein the controller switches from the first driving control to the second driving control when a remaining driving amount to the target driving amount of the focusing lens by the first driving control becomes a predetermined amount.

14. The lens apparatus according to Claim 13,

wherein the controller performs the second driving control at a second driving speed lower than a first driving

speed of the focusing lens in the first driving control.

15. The lens apparatus according to Claim 13,  
wherein the controller performs the second driving  
control when the target driving amount of the focusing lens  
calculated based on the result of the detection by the first  
focus detection unit is equal to or less than the  
predetermined amount.

16. The lens apparatus according to Claim 13,  
wherein the lens apparatus is attachable to a camera  
which comprises the first focus detection unit which detects  
the focusing state of the image-taking optical system by a  
phase difference detection method or an active method and  
the second focus detection unit which detects the focusing  
state of the image-taking optical system by a contrast  
detection method.

17. The lens apparatus according to Claim 13,  
wherein the controller switches from the first driving  
control to the second driving control without stopping the  
focusing lens.